COMPUTER INFORMATION SYSTEMS (CIS)

CIS 102. Computer Software Applications - Word
Credits: 3
Typically Offered: FALLSPR
Provides hands-on operation of personal computers with the word processing software, Microsoft Word. Students should have keyboarding skills before enrolling in the class. This class prepares students to take the Microsoft Office Specialist (MOS) exam for Word. Students will need access to the most recent version of Word for this course. The software is available as a free download through the student's BSC email account and in computer labs on campus. The MOS exam is required for completion of the course. Final grade is not based upon whether or not the student passes the MOS exam.

CIS 104. Microcomputer Database
Credits: 3
Typically Offered: FALLSPR
This is an introduction to the planning, design and programming of database systems using software designed for database management, Microsoft Access. Students should have keyboarding skills before enrolling in this class. This class prepares students to take the Microsoft Office Specialist (MOS) exam for Access. Students will need access to the most recent version of Access for this course. The software is available as a free download through the student's BSC email account and in computer labs on campus. The MOS exam is required for completion of the course. Final grade is not based upon whether student passes the MOS exam.

CIS 105. Microcomputer Spreadsheets
Credits: 3
Typically Offered: FASPSU
Provides hands-on operation of personal computers with the spreadsheet software, Microsoft Excel. Students should have keyboarding skills before enrolling in class. This class prepares students to take the Microsoft Office Specialist exam for Excel. Students will need access to the most recent version of Excel for this course. The software is available as a free download through the student's BSC email account and in computer labs on campus. The MOS exam is required for completion of the course. Final grade is not based upon whether or not the student passes the MOS exam.

CIS 107. Linux Fundamentals
Credits: 3
Typically Offered: FALLSPR
This course introduces students to the Linux operating system. It provides practical skills using command line utilities, managing processes and file systems, as well as installing and maintaining software. In addition to gaining practical Linux experience, this course helps to prepare students for the CompTIA Linux+ certification exams.

CIS 128. Microcomputer Hardware I
Credits: 3
Typically Offered: FALLSPR
Students learn the functionality of hardware and software components as well as suggested best practices in maintenance and safety issues. The students, through hands-on activities and labs, learn to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. In addition, this course helps students prepare for the CompTIA A+ certification.

CIS 130. Presentations
Credits: 3
Typically Offered: FALLSPR
This class provides hands-on production of researching, creating and delivering electronic business presentation projects using Microsoft PowerPoint. Students should have keyboarding skills before enrolling in this class. This class prepares students to take the Microsoft Office Specialist (MOS) exam for PowerPoint. Students will need access to the most recent version of PowerPoint for this course. The software is available as a free download through the student's BSC email account and in computer labs on campus. The MOS exam is required for completion of the course. Final grade is not based upon whether or not the student passes the MOS exam.

CIS 140. Cybersecurity Foundation
Credits: 3
Typically Offered: ONDEMAND
In this course, students will learn fundamental principles associated with the current cybersecurity landscape and identify concepts required to recognize and potentially mitigate attacks against enterprise networks as well as mission critical infrastructure. Students will also learn how to initially setup and configure security zones, authentication, and policies on a next generation firewall.

CIS 141. Network Security Fundamentals
Credits: 3
Prerequisite: CIS 140.
Typically Offered: ONDEMAND
Students will gain an understanding of the fundamental tenets of network security, and review the general concepts involved in maintaining a secure network computing environment. Students will also be able to describe general network security concepts and implement basic network security configuration techniques.

CIS 142. Cloud Security Fundamentals
Credits: 3
Typically Offered: ONDEMAND
In the Cloud Security Fundamentals course, students will learn basic principles associated with securing the cloud and SaaS-based applications through Secure Access Service Edge architecture and identify concepts required to recognize and potentially mitigate attacks against traditional and hybrid datacenters as well as mission critical infrastructure. Students will also learn how to initially setup and configure containers on a docker bridge network and test the container security through the use of vulnerability scans and reports.

CIS 143. Security Operations Fundamentals
Credits: 3
Typically Offered: ONDEMAND
This course provides the student with an understanding of Security operations (SecOps) and the role it plays in protecting our digital way of life, for businesses and customers. Students will learn continuous improvement processes to collect high-fidelity intelligence, contextual data, and automated prevention workflows that quickly identify and respond to fast-evolving threats. They will also learn how to leverage automation to reduce strain on analysts and execute the Security Operation Centers (SOC) mission to identify, investigate and mitigate threats.

CIS 147. Principles of Information Security
Credits: 3
Typically Offered: FASPSU
This course is intended for students who want to increase their understanding of information security. Students will learn about the types of security risks, how they work, and how we can protect our computers and networks from these risks. Topics covered include basic security principles, terminology, legal and ethical issues, as well as examining security from business and personal perspectives.

CIS 152. Cascading Style Sheets
Credits: 3
Prerequisites: CIS 154, CIS 230 and CIS 251.
Typically Offered: FALL
Students will learn how to produce and maintain cross-browser CSS files using the Sass CSS preprocessor and its companion authoring framework, Compass.

CIS 154. Website Development I
Credits: 3
Typically Offered: FALL
Students will learn how to create and manage their own Web pages using current Hypertext Markup Language (HTML), and CSS. Students will learn to write code manually. Course content includes marketing and implementing fundamental design concepts, validating code, and the planning phases of good Web design.

CIS 164. Networking Fundamentals I
Credits: 4
Typically Offered: FASPSU
This course introduces the architectures, models, protocols, and other elements used by the internet and modern computer networks. Students will learn to plan and build simple networks, as well as perform basic network device configuration and troubleshooting. This is the first of three courses providing foundational knowledge required for the Cisco Certified Network Associate (CCNA) Routing and Switching certification.

CIS 165. Networking Fundamentals II
Credits: 4
Prerequisite: CIS 164.
Typically Offered: SPRING
This course focuses on local area network switching and routing concepts. Wireless networking and security are also examined. Students will learn to perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, as well as configure and secure a basic wireless network. This is the second of three courses providing foundational knowledge required for the Cisco Certified Network Associate (CCNA) Routing and Switching certification.

CIS 185. Introduction to Programming
Credits: 3
Typically Offered: FALLSPR
This course uses the Python language to provide an introduction to computer programming. Topics include programming fundamentals, logic development, top down program design, and application creation.

CIS 186. Mobile Applications I
Credits: 3
Typically Offered: SPRING
The purpose of this course is to introduce students to mobile application development. Activities will include programming simple mobile device applications. Students will learn basic programming concepts, design concepts, and programming tools.

CIS 187. Mobile Applications II
Credits: 3
Typically Offered: SPRING
The purpose of this course is to introduce students to mobile application development in the Android development environment. Activities will include programming simple mobile device applications. Students will learn basic programming concepts, design concepts, and programming tools.

CIS 202. Advanced Software Applications
Credits: 3
Prerequisite: CIS 102, CIS 105 and CIS 130.
Corequisite: CIS 104.
Typically Offered: SPRING
Provides hands-on experience with the powerful integration capabilities of the Microsoft Office suite. Students enrolled in this course must have access to Microsoft Office 2016, specifically Word, Excel, Access, and PowerPoint for the duration of the entire course. The software is available as a free download through BSC email accounts and in computer labs on campus. Students who have not completed all prerequisites should discuss options with their advisor.

CIS 204. Database Design and Structured Query Language (SQL)
Credits: 3
Typically Offered: FALLSPR
This course focuses on the development steps needed to produce a functioning relational database, creation of the database, and use of Structured Query Language (SQL) to interact with the database. Topics covered include database design, relationships, normalization, and SQL.

CIS 206. Database Implementation and Administration
Credits: 3
Typically Offered: ONDEMAND
This course provides students with the knowledge and skills required to install, configure, administer and troubleshoot client-server database management systems.

CIS 208. Database Programming
Credits: 3
Prerequisite: CIS 204 or departmental approval.
Typically Offered: ONDEMAND
This course provides students with the technical skills required to program a database solution, using stored procedures, SQL, and proper database design principles.

CIS 209. Data Warehousing
Credits: 3
Prerequisite: CIS 208.
Typically Offered: ONDEMAND
This course provides students with the technical skills required to plan, implement, and maintain a data warehouse.

CIS 210. Desktop Publishing
Credits: 3
Typically Offered: FALL
A layout and design course using Adobe Creative Suite software to produce a variety of desktop publishing application projects. Students should have keyboarding, basic computer file management, and word processing skills before enrolling in this class. Students enrolled in this course must have access to the required software listed in the syllabus for the duration of the course. Required software is available in selected BSC computer labs for student use or for purchase at the BSC Bookstore at academic pricing. It is recommended, but not required, that CSCI 101 be taken with CIS 210 if these basic computer skills are needed.

CIS 211. Database Programming Project
Credits: 3
Prerequisite: CIS 208.
Typically Offered: ONDEMAND
This course requires students to produce a comprehensive database programming project. Design issues, implementation, and database troubleshooting will be discussed.

CIS 212. Microsoft Windows Operating System Client
Credits: 3
Typically Offered: FALLSPR
The course helps learners to gain the knowledge and skills to install, configure, customize, optimize, and troubleshoot the Microsoft Windows operating system in a stand-alone and network environment. This course provides a foundation for Microsoft Certified Solutions Associate (MCSA) certification.

CIS 213. Implementing Microsoft Windows Server Applications
Credits: 3
Typically Offered: ONDEMAND
This course introduces the learner to the Microsoft Windows Server and the application server technologies it supports. This course provides a foundation for Microsoft Certified Solutions Associate (MCSA) certification.

CIS 214. Implementing a Microsoft Windows Active Directory Infrastructure
Credits: 3
Prerequisite: CIS 216 or instructor approval.
Typically Offered: FALL
This course provides students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows Active Directory services. The course also focuses on implementing Group Policy and performing the Group Policy-related tasks that are required to centrally manage users and computers. This course provides a foundation for Microsoft Certified Solutions Associate (MCSA) certification.

CIS 215. Implementing a Microsoft Windows Server Environment
Credits: 3
Prerequisite: CIS 216.
Typically Offered: ONDEMAND
This course introduces the learner to Microsoft Windows Server and the networking technologies it supports. The learner will become familiar with networking and operating system concepts and the common tasks required to administer and support the Microsoft Windows operating system in a network environment. Windows Server 2008 is the current focus of the class. This course leads to the Microsoft Certified Technology Specialist (MCTS) and Microsoft Certified IT Professional (MCITP) certifications.

CIS 216. Implementing a Microsoft Windows Network Infrastructure
Credits: 3
Prerequisite: CIS 212 or instructor approval.
Typically Offered: SPRING
This course helps learners who will be responsible for configuring, managing, and troubleshooting a network infrastructure that uses the Microsoft Windows Server products. Students will learn how to install and manage a Microsoft Server and it roles. DHCP, DNS, RRAS, and File and Print services will be explored along with other roles and services. This course can help provide a foundation for the Microsoft Certified Technology Specialist (MCTS) and Microsoft Certified IT Professional (MCITP) certifications.

CIS 221. Networking Essentials
Credits: 3
Typically Offered: FALL
This course introduces students to the concepts and terminology of data communications, local area and wide area networks, communications hardware, standards, media, signaling concepts, data communication, error prevention, detection and correction. Course prepares students to write the Network Technology Associate exam. This CIW exam is required and students will be assessed an exam fee. Final grade is not based on whether student passes or fails certification.

CIS 223. Linux System Administration
Credits: 3
Prerequisite: CIS 107 or instructor approval.
Typically Offered: SPRING
This course covers topics relating to the administration of Linux computer systems. It provides experience in user management, task scheduling, system logging, shell scripting, system security, and other common system administration tasks. In addition to gaining practical Linux experience, this course helps to prepare students for the CompTIA Linux+ certification exams.

CIS 226. Linux Network and Security Administration
Credits: 3
Prerequisite: CIS 223 or instructor approval.
Typically Offered: FALL
This course provides experience installing, configuring, securing, and administering Linux network services. Topics include DNS servers, web servers, network file sharing, and other common network communication components. In addition to gaining practical Linux experience, this course helps to prepare students for the LPIC-2 Linux Network Professional certification exams.

CIS 230. Web Frameworks
Credits: 3
Prerequisites: CIS 154 and CIS 250.
Typically Offered: SPRING
This course will work with web frameworks. A framework provides a set of resources and tools for software developers to build and manage web applications, web services and websites.

CIS 231. Search Engine Optimization (SEO)
Credits: 3
Prerequisites: CIS 154 or CIS 230, and ENGL 110 or departmental approval.
Typically Offered: FALL
Students will learn the basic principles of optimizing Web sites for improved performance in search engine results, ultimately enhancing the marketability of their Web site products and/or services. Students will further develop a basic understanding of the history of search engines, differences in search engine and directory results, and applied practices in structuring HTML and page content to increase the website's visibility to the consumer.

CIS 235. DB Design for Web Applications
Credits: 3
Typically Offered: FALL
This course introduces students to SQL and the query use within databases. Students will develop queries for information retrieval using SQL, including the use of operators, clauses, predicates, functions, concatenated fields, calculated fields, crosstab queries, parameter queries, updates and joins.

CIS 241. Digital Forensics Fundamentals
Credits: 3
Typically Offered: SPRING
This course introduces students to digital forensics. Topics covered include the investigative process, preservation of evidence, mobile and cloud forensics issues, as well as providing experience using digital forensics software.

CIS 250. Advanced Web Design
Credits: 3
Typically Offered: FALL
Students will learn how to add JavaScript to their Web pages. Concepts covered include variables, expressions, operators, functions, methods, objects, events, control structures, windows, forms, strings, arrays, cookies, DHTML, and AJAX.

CIS 251. Website Development II
Credits: 3
Prerequisite: CIS 154.
Typically Offered: SPRING
This course offers continued study in the design and development of website projects. Student will create up to three websites for inclusion in their portfolios.

CIS 252. XML
Credits: 3
Prerequisite: CIS 104.
Typically Offered: SPRING
This course will introduce students to Extensible Markup Language (XML). Concepts covered include document type definitions (DTDs), schemas, namespaces. Other topics covered include the use of XML in application software, such as Microsoft Office suite.

CIS 253. PHP
Credits: 3
Prerequisites: CIS 154 and CIS 185 or CIS 250 and CIS 204 or departmental approval.
Typically Offered: SPRING
Students will learn how to design dynamic, data-driven Web pages using PHP. Concepts covered include variables, constants, data types, expressions, operators, functions, controls structures, strings, forms, files, directories, arrays, databases and MySQL.

CIS 255. Computer and Network Security
Credits: 3
Prerequisite: CIS 147 or instructor approval.
Typically Offered: SPRING
This course introduces students to technologies and practices used to secure computers and networks. Topics covered include cryptography, secure authentication, logging, device security, and other aspects of enterprise security. Extensive networking and operating system knowledge is recommended. In addition to gaining practical security experience, this course helps to prepare students for the CompTIA Security+ certification.

CIS 256. Web Capstone
Credits: 3
Prerequisites: CIS 154, CIS 230 and CIS 152.
Typically Offered: SPRING
Students will continue development of their student web portfolio through emerging technologies in the web industry.

CIS 257. JavaScript Libraries
Credits: 3
Prerequisites: CIS 154, CIS 250, and CIS 251.
Typically Offered: FALL
This course will work with JavaScript libraries. A library provides various functions, methods, or objects to perform practical tasks on a webpage or a JS-based application.

CIS 258. Advanced PHP
Credits: 3
Prerequisite: CIS 253.
Typically Offered: SPRING
Students will learn more advanced PHP techniques for session management, validation, and authentication. Advanced web application features such as shopping carts, a content manager, web forums and connecting to web services are discussed.

CIS 264. Web Application Development
Credits: 3
Typically Offered: FALL
This course provides an introduction to the languages used to develop applications that run in web browsers and on web servers. Topics include HTML, Cascading Stylesheets, JavaScript, PHP, and Content Management Systems.

CIS 267. Intermediate Networking I
Credits: 4
Prerequisite: CIS 165 or instructor approval.
Typically Offered: FALL
This course further examines local area network routing, connectivity, and security concepts. Wide area network communications and quality of service are also introduced. Additionally, students will learn about software-defined networking, virtualization, and automation, as well as network management and design. This course is the third of three courses providing foundational knowledge for the Cisco Certified Network Associate (CCNA) Routing and Switching certification.

CIS 268. Intermediate Networking II
Credits: 4
Prerequisite: CIS 267 or instructor approval.
Typically Offered: SPRING
In this course, students learn to connect communication networks. Network management and Wide Area Networking concepts will be examined. In addition to gaining practical networking experience, this course helps to prepare students for the Cisco Certified Network Associate (CCNA) certification exam.

CIS 269. Computer Information Systems Capstone
Credits: 3
Typically Offered: SPRING
This course prepares students, from computer information systems-related program, for entry into the information technology workforce. Students will complete comprehensive projects, prepare resumes, job shadow, and examine other employment-related activities. Any students taking this course should do so during the final semester of their program.

CIS 270. Advanced IP Routing
Credits: 4
Prerequisite: CIS 268, CCNA certification or departmental approval.
Typically Offered: ONDEMAND
This course teaches the advanced skills required to implement and support enterprise-class IP routing networks. Topics covered include advanced EIGRP, advanced OSPF, route optimization, and BGP. This is the first of three courses leading to the Cisco Certified Professional (CCNP) Routing and Switching certification.

CIS 272. Advanced IP Switching
Credits: 4
Prerequisite: CIS 268, CCNA certification, or departmental approval.
Typically Offered: ONDEMAND
This course teaches the advanced skills required to implement and support enterprise class switched networks. Topics covered include scalable network design, advanced STP, implementing inter-VLAN routing, first hop redundancy and supporting high availability. This is the second of three courses leading to the Cisco Certified Network Professional (CCNP) Routing and Switching certification.

CIS 273. Advanced IP Network Troubleshooting
Credits: 4
Prerequisites: CIS 270 and CIS 272 or departmental approval.
Typically Offered: ONDEMAND
This course teaches students to maintain and troubleshoot enterprise IP networks. Skills learned include the planning and execution of regular network maintenance, as well as support and troubleshooting using technology based processes and best practices. This is the third of three courses leading to the Cisco Certified Network Professional (CCNP) Routing and Switching certification.

CIS 274. Cybersecurity Operations
Credits: 3
Prerequisites: CIS 147 or instructor approval.
Typically Offered: FALL
This course teaches core security skills needed for monitoring, detecting, investigating, analyzing and responding to security events, thereby protecting systems and organizations from cybersecurity risks, threats and vulnerabilities.

CIS 275. Immersive Cybersecurity Concepts
Credits: 3
Prerequisites: CIS 255 and CIS 274.
Typically Offered: SPRING
In this course, students learn to implement a variety of tools, technologies, and techniques to defend an IT infrastructure. Role-based scenarios and challenges will be presented, allowing students to practice and apply their cybersecurity defense skills.

CIS 280. Cyber Ethics
Credits: 3
Typically Offered: FALLSPR
This class is an introduction to ethical problems and decision making as it relates to computers, cybersecurity, and emerging technologies. Students will be asked to examine moral issues, and apply ethical theory to them. Aspects of what is right, wrong and socially acceptable in terms of technology use will be discussed.

CIS 282. Ethical Hacking and Network Defense
Credits: 3
Prerequisite: CIS 255 or instructor approval.
Typically Offered: SPRING
This course provides experience securing computer network resources. The tools and methodologies attackers use will be examined, as well as defenses against them.

CIS 438. End-User Data Analysis Tools
Credits: 3
Typically Offered: FASPSU
Students will be introduced to current technologies available to analyze data. Formats will vary to include tools most asked for by industry. Comparative analysis will allow students to analyze the benefits, strengths, and weaknesses of a variety of tools commonly used.

CIS 452. Advanced Excel Spreadsheets / Business Analytics
Credits: 3
Prerequisite: CIS 105 and CIS 204 with a grade of C or better.
Typically Offered: FASPSU
This course allows students to practice advanced techniques in applications used by managers and other business stakeholders to analyze information to enable informed decisions.